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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/768,886	01/31/2004	Yinong Yang	UAF-03-14	8057

34607 7590 11/03/2005

ANGELA FOSTER, PHD, ESQ.
2906 BIRCHWOOD COURT
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EXAMINER	
KUMAR, VINOD	
ART UNIT	**PAPER NUMBER**
1638	

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/768,886	YANG ET AL.	
	Examiner	Art Unit	
	Vinod Kumar	1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *1* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01/31/2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-50* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-10, 26-28, 31, 32, 35, 36, 38, 42, 44, 47 drawn to an isolated nucleic acid molecule, or wherein an expression vector comprising the said isolated nucleic acid molecule, or wherein a genetically engineered host cell comprising the said nucleic acid operatively associated with a regulatory sequence containing transcriptional and translational regulatory information that controls expression of said nucleotide sequence in a host cell, or wherein a genetically engineered host cell is prokaryotic or eukaryotic, or a transgenic plant transformed by a nucleotide sequence that encodes a polypeptide consisting of amino acid sequence of MAPK5, and wherein over-expression of the MAPK5 ortholog in plant results in increased tolerance to abiotic stress compared to a wild-type plant, or a method for enhancing tolerance to abiotic stress, classified in class 800, subclass 289, for example.

II. Claims 11-20, 26 and 48 drawn to an isolated nucleic acid, or wherein said nucleic acid is cDNA or RNA, or a recombinant vector comprising the said nucleotide sequence containing transcriptional and translational regulatory information that controls expression of the nucleotide sequence in a host cell, or a genetically engineered host cell comprising said nucleotide

sequence, or wherein said host cell is prokaryotic or eukaryotic, classified in class 536, subclass 23.1, for example.

III. Claims 21-23, drawn to an antibody that specifically binds to a peptide consisting of the C-terminal portion of the MAPK5 amino acid sequence, or wherein said antibody is monoclonal or polyclonal, classified in class 530, subclass 388.1, for example

IV. Claims 24-25, drawn to a polypeptide which has kinase activity, classified in class 435, subclass 183, for example

V. Claims 29, 39, 33-35, 37, 38, 43 and 44, drawn to a transgenic plant transformed by a nucleotide sequence operatively linked to a regulatory sequence that encodes RNA interference structure wherein suppression of the MAPK5 ortholog nucleic acid sequence in the plant results in increased resistance to biotic stress compared to a wild-type plant, or a transgenic plant transformed by a nucleotide sequence that encodes a polypeptide consisting of the amino acid sequence operatively linked to a regulatory sequence that controls gene expression so that expression of said amino acid is suppressed in the plant compared to a wild type plant, or a method for increasing resistance to biotic stress comprising transforming plant with said nucleic acid or a method for increasing resistance to biotic stress in a plant comprising isolating MAPK5 protein from the plant comprising immunospecifically binding MAPK5 protein to an MAPK5 antibody, classified in class 800, subclass 285, for example.

VI. Claim 39, drawn to a mitogen-activated protein kinase produced by a transgenic plant, classified in class 435, subclass 183, for example.

VII. Claims 40, 44 and 50 drawn to a method for evaluating a plant to abiotic stress comprising treating a plant with abiotic stress, or wherein the isolating step comprises immunospecifically binding MAPK5 protein to an MAPK5 antibody, classified in class 435, subclass 69.3, for example.

VIII. Claims 41, 44 and 49 drawn to a method for evaluating a plant for resistance to biotic stress comprising treating a plant with a pathogen, wherein the isolating step comprises immunospecifically binding MAPK5 protein to an MAPK5 antibody, or wherein a kit for screening a plant for susceptibility to biotic stress comprising the nucleic acid probe and at least one reagent suitable for detecting the presence of a nucleic acid molecule encoding MAPK5 whereby the changes in polymorphic patterns of MAPK5 indicates the plant is susceptible to biotic stress classified in class 435, subclass 69.3, for example.

IX. Claim 47 drawn to an isolated nucleic acid probe that comprises a label and a nucleotide sequence that encoding a polypeptide, classified in class 536, subclass 23.2, for example.

Claim 46 is dependent on a method of claim 38 and 40. However, claim 38 is directed to a product not to a method. Claim 46 contains the recitation "wherein the biotic stress" in line 1. However, the method of claim 40 is for treating an abiotic stress. For these reasons, the metes and bounds of claim 46 are too unclear to place them within a group.

The inventions are distinct, each from the other because of the following reasons:

Inventions of Group I and II-IX are patentably distinct. Invention of Group I requires transformation of a plant with a nucleic acid encoding a polypeptide consisting

of amino acid sequence of MAPK5 to produce transgenic plants with increased tolerance to abiotic stress. The invention of Group I requires SEQ ID NO: 1 encoding a polypeptide with SEQ ID NO: 2. There is no such requirement for the inventions of Group II-IX.

Furthermore, searching the inventions of Groups I and II-IX together would impose a serious search burden. In the instant case, the search for the transgenic plants with increased stress tolerance comprising SEQ ID NOs: 1 or 2 of Group I and SEQ ID NOs: 3 and 4 of Group II, antibody of Group III, polypeptide with kinase activity of Group IV, transgenic plants overexpressing RNA interference structure of Group V, mitogen activated kinase of Group VI, and method of evaluating abiotic stress of Group VII, method of evaluating biotic stress of Group VIII, and isolated nucleic probe of Group IX are not coextensive. The inventions of groups I and II-IX have a separate status in the art as shown by their different classifications.

Inventions of Group II and III-IX are patentably distinct. Invention of Group II requires a genetically engineered continuous host cell line comprising a nucleotide sequence as defined in SEQ ID NO: 3 encoding a polypeptide as defined in SEQ ID NO: 4. However, there is no such requirement for the inventions of Group IV-IX.

Furthermore, searching the inventions of groups II and IV-IX together would impose a serious search burden. In the instant case, the search for a genetically engineered host cell line comprising SEQ ID NO: 3 encoding a protein as defined in SEQ ID NO: 4 and monoclonal and polyclonal antibody against MAPK5 kinase polypeptide with kinase activity of Group IV and transgenic plants overexpressing RNA interference structure of Group V, mitogen activated kinase of Group VI, method of evaluating abiotic stress of Groups VII, method of evaluating biotic stress of Group VIII,

and isolated nucleic probe of Group IX are not coextensive. The inventions of Groups II and III-IX have a separate status in the art as shown by their different classifications.

Inventions of Group III and IV-IX are patentably distinct. Invention of Group III requires a monoclonal or polyclonal antibody that specifically binds to a peptide consisting C-terminal portion of the MAPK5 amino acid sequence. However, there is no such requirement for the inventions of Groups IV, VI and IX. Likewise, invention of Group III does not require transgenic plant expressing MAPK5 protein whereas there is no such requirement for the invention of Group V. Similarly, Group III invention does not require treating a plant with abiotic stress as required by the invention of Group VII. Group III also does not require evaluating a plant for a biotic stress comprising treating a plant with pathogen as required by the invention of Group VIII.

Furthermore, searching the inventions of Groups III and IV-IX together would impose a serious search burden. In the instant case, the search for antibody of Group III, polypeptide with kinase activity of Group IV, transgenic plants overexpressing RNA interference structure of Group V, mitogen activated kinase of Group VI, method of evaluating abiotic stress of Groups VII, method of evaluating biotic stress of Group VIII, and isolated nucleic probe of Group IX are not coextensive. The inventions of Groups III and IV-IX have a separate status in the art as shown by their different classifications.

Inventions of Group IV and V-VIII are patentably distinct. Invention of Group IV requires a polypeptide with enzymatic activity, whereas there is no such requirement for Invention of Groups V, VII and VIII. The invention of Group IV does not require transgenic plant and mitogen activated kinase as required by the invention of Group VI.

Inventions of Group IV and IX are patentably distinct. Invention of Group IV is a polypeptide sequence with kinase activity whereas invention of Group IX is a nucleic

acid probe that can be used for hybridization reaction. Both products can be made by means that do not require the other, such as chemical synthesis.

Furthermore, searching the inventions of Groups IV and V-IX together would impose a serious search burden. In the instant case, the search for a polypeptide with kinase activity of Group IV and transgenic plants overexpressing RNA interference structure of Group V, mitogen activated kinase of Group VI, method of evaluating abiotic stress of Groups VII, method of evaluating a biotic stress of Group VIII, and isolated nucleic probe of Group IX are not coextensive. The inventions of Groups IV and V-IX have a separate status in the art as shown by their different classifications.

Inventions of Group V and VI-IX are patentably distinct. Invention of Group V requires a transgenic plant with RNA interference structure that suppresses expression of MAPK5 ortholog, whereas there is no such requirement for Invention of Groups VI-IX.

Furthermore, searching the inventions of Groups V and VI-IX together would impose a serious search burden. In the instant case, the search for transgenic plants overexpressing RNA interference structure of Group V and mitogen activated kinase of Group VI, method of evaluating abiotic stress of Groups VII, method of evaluating a biotic stress of Group VIII, and isolated nucleic probe of Group IX are not coextensive. The inventions of Groups V and VI-IX have a separate status in the art as shown by their different classifications.

Inventions of Group VI and VII-IX are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, Invention of Group VI requires a mitogen activated kinase

produced by a transgenic plant, whereas there is no such requirement for Invention of Groups VII-IX.

Furthermore, searching the inventions of Groups VI and VII-IX together would impose a serious search burden. In the instant case, the search for mitogen activated kinase produced by a transgenic plant of Group VI and method of evaluating abiotic stress of Group VII and method of evaluating a biotic stress of Group VIII, and isolated nucleic probe of Group IX are not coextensive. The inventions of Groups VII-IX have a separate status in the art as shown by their different classifications.

Inventions of Group VII and VIII are patentably distinct. Invention of Group VII requires treating plant with abiotic stress, whereas invention of Group VIII requires treating a plant with biotic stress.

Inventions of Group VIII and IX are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, Invention of Group VIII requires treating a plant with abiotic stress whereas invention of Group IX is a nucleic acid probe that can be used for hybridization reaction.

Furthermore, searching the inventions of Groups VII and VIII-IX together would impose a serious search burden. In the instant case, the search methods of evaluating abiotic of Group VII and a method of evaluating of a biotic stress using a kit for screening a plant for susceptibility to biotic stress of Groups VIII, and isolated nucleic probe of Group IX are not coextensive. The inventions of Groups VII and IX have a separate status in the art as shown by their different classifications.

Inventions of Group VIII and IX are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, Invention of Group VIII requires treating a plant with a biotic stress whereas invention of Group IX is a nucleic acid probe that can be used for hybridization reaction.

Furthermore, searching the inventions of Groups VIII and IX together would impose a serious search burden. In the instant case, the search for a kit for screening a plant for susceptibility to a biotic stress of Groups VIII, and isolated nucleic probe of Group IX are not coextensive. The inventions of Groups VIII and IX have a separate status in the art as shown by their different classifications.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, recognized divergent subject matter, and because the search required for one of the groups is not required for another restriction for examination purposes as indicated is proper.

A telephone call was made to Angela Foster on October 19, 2005 to request an oral election to the above restriction requirement, but did not result in an election being made.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Non-elected subject should be removed from the claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vinod Kumar whose telephone number is (571) 272-4445. The examiner can normally be reached on 8.30 a.m. to 5.00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William (Gary) G. Jones can be reached on (571) 272-0745. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ASHWIN D. MEHTA, PH.D.
PRIMARY EXAMINER